

SEQUENCE LISTING

<110> KANEKA CORPORATION

<120> NOVEL ACETOACETYL-CoA REDUCTASE AND PROCESS FOR PRODUCING OPTICALLY ACTIVE ALCOHOL

<130> B030435W001

<150> JP2003-380987

<151> 2003-11-11

<160> 15

<170> PatentIn version 3.1

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<211> 245

<212> PRT

<213> Achromobacter xylosoxidans subsp. denitrificans

<400> 1

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Gly Cys Gly Pro Ser Arg Asn Tyr Gln Gln Trp Leu Asp Glu Gln Ala
      35      40      45
Ala Gln Gly Tyr Thr Phe Tyr Ala Ser Val Gly Asn Val Ser Asp Trp
      50      55      60
Glu Ser Thr Val Glu Ala Phe Glu Arg Val Lys Arg Asp Met Gly Pro
65      70      75      80
Val Asp Val Leu Val Asn Asn Ala Gly Ile Thr Arg Asp Gly Leu Phe
      85      90      95
Arg Lys Met Ser Ala Asp Asp Trp Arg Ala Val Ile Asp Thr Asn Leu
      100     105     110
Asn Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Asp Met Val Glu
      115     120     125
Arg Gln Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln Lys
      130     135     140
Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Ile His
      145     150     155     160
Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Ser Lys Gly Ile Thr
      165     170     175
Val Asn Thr Val Ser Pro Gly Tyr Ile Gly Thr Asp Met Val Arg Ala
      180     185     190
Ile Arg Pro Asp Val Leu Glu Lys Ile Val Ala Thr Ile Pro Val Arg
      195     200     205
Arg Leu Gly Thr Pro Glu Glu Ile Ala Ser Ile Thr Ser Trp Leu Ala
      210     215     220
Ser Asp Glu Ser Gly Phe Ser Thr Gly Ala Asp Phe Ser Leu Asn Gly
225     230     235     240
Gly Leu His Met Gly
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<210> 2

<211> 738

<212> DNA

<213> Achromobacter xylosoxidans subsp. denitrificans

<220>

<221> CDS

<222> (1).. (738)

<223>

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 Thr Ser Ile Cys Gln Arg Leu Ala Lys Asp Gly Phe Arg Val Val Ala
 20 25 30
 ggc tgc ggc ccc agc cgc aat tac cag caa tgg ctg gat gaa cag gcg 144
 Gly Cys Gly Pro Ser Arg Asn Tyr Gln Gln Trp Leu Asp Glu Gln Ala
 35 40 45
 gcg cag ggc tat acg ttc tac gcg tca gtg ggc aac gtg tcc gat tgg 192
 Ala Gln Gly Tyr Thr Phe Tyr Ala Ser Val Gly Asn Val Ser Asp Trp
 50 55 60
 gag tcc acg gta gaa gca ttc gag cgc gtc aag cgg gac atg ggc ccg 240
 Glu Ser Thr Val Glu Ala Phe Glu Arg Val Lys Arg Asp Met Gly Pro
 65 70 75 80
 gtc gat gtg ctg gtc aac aac gcg ggc atc acc cgc gac ggc ctg ttc 288
 Val Asp Val Leu 85 Asn Asn Ala Gly Ile Thr Arg Asp Gly Leu Phe
 90 95
 cgc aag atg agc gcc gac gac tgg cgc gcg gtc atc gac acc aac ctg 336
 Arg Lys Met Ser Ala Asp Asp Trp Arg Ala Val Ile Asp Thr Asn Leu
 100 105 110
 aac agc ctc ttc aac gtg acc aag cag gtg atc gac gac atg gtc gag 384
 Asn Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Asp Met Val Glu
 115 120 125
 cgc cag tgg ggc cgc atc gtc aac atc agc tgc gtg aac ggg cag aag 432
 Arg Gln Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln Lys
 130 135 140
 ggg cag ttc ggc cag acg aac tat tcc acg gcg aag gcg ggc atc cat 480
 Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Ile His
 145 150 155 160
 ggc ttc acc atg ggc ctg gcg cag gaa gtg gcc agc aag ggc atc acg 528
 Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Ser Lys Gly Ile Thr
 165 170 175
 gtc aac acg gtg tgc ccg ggc tac atc ggc acg gac atg gtt cgc gcc 576
 Val Asn Thr Val Ser Pro Gly Tyr Ile Gly Thr Asp Met Val Arg Ala
 180 185 190
 atc cgt ccg gac gtg ctg gaa aag atc gtc gcc acc att ccg gtg cgc 624
 Ile Arg Pro Asp Val Leu Glu Lys Ile Val Ala Thr Ile Pro Val Arg
 195 200 205
 cgc ctg ggc acg ccg gag gaa atc gcg tcc atc acg tgc tgg ctg gcc 672
 Arg Leu Gly Thr Pro Glu Glu Ile Ala Ser Ile Thr Ser Trp Leu Ala
 210 215 220
 tgc gat gag tct ggg ttt tgc acg ggc gcg gac ttc tgc ctc aac ggc 720
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 225 230 235 240
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 Gly Leu His Met Gly
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<210> 3
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 <212> PRT
 <213> Ralstonia eutropha

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 20 25 30
 Gly Cys Gly Pro Asn Ser Pro Arg Arg Glu Lys Trp Leu Glu Gln Gln

35	40	45
Lys Ala Leu Gly Phe Asp	Phe Ile Ala Ser Glu Gly	Asn Val Ala Asp
50	55	60
Trp Asp Ser Thr Lys	Thr Ala Phe Asp Lys	Val Lys Ser Glu Val Gly
65	70	75
Glu Val Asp Val	Leu Ile Asn Asn Ala Gly	Ile Thr Arg Asp Val Val
85	90	95
Phe Arg Lys	Met Thr Arg Ala Asp	Trp Asp Ala Val Ile Asp Thr Asn
100	105	110
Leu Thr Ser	Leu Phe Asn Val Thr	Lys Gln Val Ile Asp Gly Met Ala
115	120	125
Asp Arg Gly	Trp Gly Arg Ile Val Asn	Ile Ser Ser Val Asn Gly Gln
130	135	140
Lys Gly Gln Phe Gly	Gln Thr Asn Tyr Ser	Thr Ala Lys Ala Gly Leu
145	150	155
His Gly Phe Thr	Met Ala Leu Ala Gln	Glu Val Ala Thr Lys Gly Val
165	170	175
Thr Val Asn	Thr Val Ser Pro Gly	Tyr Ile Ala Thr Asp Met Val Lys
180	185	190
Ala Ile Arg	Gln Asp Val Leu Asp	Lys Ile Val Ala Thr Ile Pro Val
195	200	205
Lys Arg Leu Gly	Leu Pro Glu Glu Ile Ala Ser	Ile Cys Ala Trp Leu
210	215	220
Ser Ser Glu Glu Ser	Gly Phe Ser Thr Gly	Ala Asp Phe Ser Leu Asn
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Gly Gly Leu His	Met Gly	
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 <213> *Ralstonia eutropha*

<220>
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 <222> (1).. (741)
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Thr Ala Ile Cys Gln Arg Leu Ala Lys Asp Gly Phe Arg Val Val Ala	
20 25 30	
ggt tgc ggc ccc aac tcg ccg cgc cgc gaa aag tgg ctg gag cag cag	144
Gly Cys Gly Pro Asn Ser Pro Arg Arg Glu Lys Trp Leu Glu Gln Gln	
35 40 45	
aag gcc ctg ggc ttc gat ttc att gcc tcg gaa ggc aat gtg gct gac	192
Lys Ala Leu Gly Phe Asp Phe Ile Ala Ser Glu Gly Asn Val Ala Asp	
50 55 60	
tgg gac tcg acc aag acc gca ttc gac aag gtc aag tcc gag gtc ggc	240
Trp Asp Ser Thr Lys Thr Ala Phe Asp Lys Val Lys Ser Glu Val Gly	
65 70 75 80	
gag gtt gat gtg ctg atc aac aac gcc ggt atc acc cgc gac gtg gtg	288
Glu Val Asp Val Leu Ile Asn Asn Ala Gly Ile Thr Arg Asp Val Val	
85 90 95	
ttc cgc aag atg acc cgc gcc gac tgg gat gcg gtg atc gac acc aac	336
Phe Arg Lys Met Thr Arg Ala Asp Trp Asp Ala Val Ile Asp Thr Asn	
100 105 110	

ctg acc tcg ctg ttc aac gtc acc aag cag gtg atc gac ggc atg gcc Leu Thr Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Gly Met Ala 115 120 125	384
gac cgt ggc tgg ggc cgc atc gtc aac atc tcg tcg gtg aac ggg cag Asp Arg Gly Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln 130 135 140	432
aag ggc cag ttc ggc cag acc aac tac tcc acc gcc aag gcc ggc ctg Lys Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Leu 145 150 155 160	480
cat ggc ttc acc atg gca ctg gcg cag gaa gtg gcg acc aag ggc gtg His Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Thr Lys Gly Val 165 170 175	528
acc gtc aac acg gtc tct ccg ggc tat atc gcc acc gac atg gtc aag Thr Val Asn Thr Val Ser Pro Gly Tyr Ile Ala Thr Asp Met Val Lys 180 185 190	576
gcg atc cgc cag gac gtg ctc gac aag atc gtc gcg acg atc ccg gtc Ala Ile Arg Gln Asp Val Leu Asp Lys Ile Val Ala Thr Ile Pro Val 195 200 205	624
aag cgc ctg ggc ctg ccg gaa gag atc gcc tcg atc tgc gcc tgg ttg Lys Arg Leu Gly Leu Pro Glu Glu Ile Ala Ser Ile Cys Ala Trp Leu 210 215 220	672
tcg tcg gag gag tcc ggt ttc tcg acc ggc gcc gac ttc tcg ctc aac Ser Ser Glu Glu Ser Gly Phe Ser Thr Gly Ala Asp Phe Ser Leu Asn 225 230 235 240	720
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<220>
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 <223> n represents a, t, g or c

<220>
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 <222> (12).. (12)
 <223> n represents a, t, g or c

<400> 5
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<210> 6
 <211> 20
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<220>
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 <223> n represents a, t, g or c

<220>
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 <222> (15).. (15)
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<210> 7
<211> 25
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<220>
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<400> 7
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<210> 8
<211> 25
<212> DNA
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<220>
<223> Primer 4

<400> 8
agggcacac ggtcaacacg gtgc 25

<210> 9
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5

<400> 9
gtacataga gcggaaaact ggcttacg 28

<210> 10
<211> 34
<212> DNA
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<220>
<223> Primer 6

<400> 10
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<210> 11
<211> 43
<212> DNA
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<220>
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<400> 11
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<210> 12
<211> 28
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<220>
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<400> 12
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<210> 13
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<220>

<223> Primer 9

<400> 13

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<210> 14

<211> 34

<212> DNA

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<210> 15

<211> 900

<212> DNA

<213> *Achromobacter xylosoxidans* subsp. *denitrificans*

<220>

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<222> (40)..(778)

<223>

<400> 15

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ctttcgcgtg	gtggcaggct	gcggccccag	ccgcaattac	180
cagcaatggc	tggatgaaca	ggcggcgtag	ggctatacgt	240
tctacgcgtc	agtgggcaac	gtgtccgatt	gggagtcac	300
ggtagaagca	ttcgagcgcg	tcaagcggga	catgggcccgt	360
gtcgtatgtc	tggtaacaa	cgccggcatc	acccgcgacg	420
gcctgttccg	caagatgagc	gccgacgact	ggcgcgcggt	480
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caggtgatcg	acgacatggt	cgagcgccag	tggggccgca	600
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cggccagacg	aactattcca	cggcgaaggc	gggcatccat	720
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